III.   AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.   (Original):   A method of automated sample processing, comprising the steps of:

> providing at least one sample;
> determining a processing sequence for at least one sample;
> actively regulating temperature of said sample; and
> automatically processing said sample.

2.   (Original):   A method of automated sample processing as described in claim 1 wherein said step of actively regulating temperature comprises the step of reducing temperature of said sample.

3.   (Original):   A method of automated sample processing as described in claim 2 and further comprising the step of controlling a reduction in temperature.

4.   (Original):   A method of automated sample processing as described in claim 2 wherein said step of actively regulating temperature comprises the step of maintaining sample temperature at less than about ambient temperature of said sample processing system.

5.   (Original):   A method of automated sample processing as described in claim 1 wherein said step of corresponding to at least one temperature tolerance.

6. (Original): A method of automated sample processing as described in claim 1 wherein said step of actively regulating temperature of said sample comprises the step of actively regulating temperature of said sample to at least one tolerance.

7. (Original): A method of automated sample processing as described in claim 1 wherein said step of actively regulating temperature of said sample comprises the step of actively maintaining a temperature of about a sample set point.

8. (Original): A method of automated sample processing as described in claim 1 wherein said step of actively maintaining a temperature of about a sample set point comprises the step of actively maintaining temperature within a range of about 1 degrees above and 1 degrees below said sample set point.

9. (Original): A method of automated sample processing as described in claim 1 wherein said step of actively regulating temperature of said sample comprises the step of regulating a ramped increase in temperature.

10. (Original): A method of automated sample processing as described in claim 1 wherein said step of actively regulating temperature of said sample comprises the step of regulating a ramped decrease in temperature.

11. (Currently amended): A method of automated sample processing as described in claim 9 [[or 10]] wherein said step of actively regulating temperature of said sample comprises the step of regulating a reduced rate of temperature change.

12. (Original): A method of automated sample processing as described in claim 1 and further comprising the step of regulating a temperature of a reagent.

13. (Original): A method of automated sample processing as described in claim 12 wherein said step of regulating a temperature of a reagent comprises the step of actively regulating a temperature of a reagent.

14.   (Original):   A method of automated sample processing as described in claim 13 wherein said step of actively regulating a temperature of a reagent comprises the step of optimizing reagent temperature at a thermal set point.

15.   (Original):   A method of automated sample processing as described in claim 14 wherein said step of optimizing reagent temperature at a thermal set point comprises the step of actively maintaining reagent temperature at less than about an ambient temperature of a sample processing system.

16.   (Original):   A method of automated sample processing as described in claim 13 wherein said step of actively regulating a temperature of a reagent comprises the step of maintaining reagent shelf life.

17.   (Currently amended): A method of automated sample processing as described in claim 1, 4, 12, 13, or 15 wherein said step of actively regulating temperature of said sample comprises the step of adaptively regulating temperature of said sample.

18.   (Original):   A method of automated sample processing as described in claim 17 wherein said step of adaptively regulating temperature of said sample comprises the step of adaptively regulating temperature corresponding to at least one sample carrier.

19.   (Currently amended):. A method of automated sample processing as described in claim 1, 4, 13, 15, or 17 wherein said step of actively regulating temperature of said sample comprises the step of utilizing a Peltier device.

20.   (Original):   A method of automated sample processing as described in claim 17 wherein said step of adaptively regulating temperature of said sample comprises the step of regulating temperature with a Peltier grid.

21. (Original): A method of automated sample processing as described in claim 17 wherein said step of adaptively regulating temperature of said sample comprises the step of utilizing a conductive device.

22. (Original): A method of automated sample processing as described in claim 20 wherein said step of regulating temperature with a Peltier grid comprises the step of regulating temperature with a plurality of thermal elements each corresponding to a sample carrier support.

23. (Original): A method of automated sample processing as described in claim 17 wherein said step of adaptively regulating temperature of said sample comprises the step of adaptively decreasing temperature from ambient temperature to a target temperature, wherein said ambient temperature is greater than said target temperature.

24. (Original): A method of automated sample processing as described in claim 17 wherein said step of adaptively regulating temperature of said sample comprises the step of providing a controlled increase in temperature.

25. (Original): A method of automated sample processing as described in claim 17 wherein said step of adaptively regulating temperature of said sample comprises the step of decreasing temperature.

26. (Original): A method of automated sample processing as described in claim 25 wherein said step of adaptively regulating temperature of said sample comprises the step of providing a controlled decrease in temperature.

27. (Original): A method of automated sample processing as described in claim 26 wherein said step of adaptively regulating temperature of said sample comprises the steps of:

determining at least one desired sample temperature; and

decreasing temperature of said sample to said desired sample temperature.

28. (Original): A method of automated sample processing as described in claim 27 wherein said step of adaptively regulating temperature of said sample further comprises the steps of:

determining a sample temperature tolerance; and

maintaining said sample temperature within said sample temperature tolerance.

29. (Original): A method of automated sample processing as described in claim 27 wherein an ambient system temperature is above said temperature of said sample.

30. (Currently amended): A method of automated sample processing as described in claim 1 [[or 18]] wherein said step of actively regulating temperature of said sample comprises the step of reducing a rate of temperature change.

31. (Currently amended): A method of automated sample processing as described in claim 1 [[or 18]] wherein said step of actively regulating temperature of said sample comprises the step of maintaining at least one temperature tolerance corresponding to at least one sample carrier.

32. (Original): A method of automated sample processing as described in claim 13 wherein said step of actively regulating a temperature of a reagent comprises the step of optimizing reagent temperature at a thermal set point.

33. (Original): A method of automated sample processing as described in claim 32 wherein said step of optimizing reagent temperature at a thermal set point comprises the step of maintaining reagent temperature at less than about ambient temperature of said sample processing system.

34.   (Original):   A method of automated sample processing as described in claim 13 wherein said step of actively regulating a temperature of a reagent comprises the step of maintaining reagent shelf life.

35.   (Original):   A method of automated sample processing as described in claim 19 wherein said step of actively regulating temperature of said sample comprises the step of maintaining a temperature of between about 2 and about 8 degrees Celsius.

36.   (Original):   A method of automated sample processing as described in claim 19 wherein said step of actively regulating temperature of said sample comprises the step of maintaining a temperature within a range of about 2 degrees above and 2 degrees below 24 degrees Celsius.

37.   (Original):   A method of automated sample processing as described in claim 1 wherein said step of providing at least one sample comprises the step of providing at least one batch of samples.

38.   (Original):   A method of automated sample processing as described in claim 1 and further comprising the step of determining at least one temperature tolerance for at least one component of said sample processing system.

39.   (Original):   A method of automated sample processing as described in claim 38 wherein said step of determining at least one temperature tolerance for at least one component of said sample processing system comprises the step of determining at least one tolerance corresponding to at least one sample carrier.

40.   (Original):   A method of automated sample processing as described in claim 38, wherein said step of determining at least one tolerance for at least one component of said sample processing system comprises the step of determining at least one tolerance corresponding to at least one reagent.

41. (Original): A method of automated sample processing as described in claim 1 wherein said step of determining a processing sequence for at least one sample comprises the step of determining an immunohistochemistry processing sequence.

42. (Original): A method of automated sample processing as described in claim 1 wherein said step of determining a processing sequence for at least one sample comprises the step of determining an in-situ hybridization processing sequence.

43. (Original): A method of automated sample processing as described in claim 1 wherein said step of determining a processing sequence for at least one sample comprises the step of determining an fluorescent in-situ hybridization processing sequence.

44. (Original): A method of automated sample processing as described in claim 1 wherein said step of determining a processing sequence for at least one sample comprises the step of determining a microarray processing sequence.

45. (Original): A method of automated sample processing as described in claim 1 wherein said step of determining a processing sequence for at least one sample comprises the step of determining a target retrieval processing sequence.

46. (Original): A method of automated sample processing as described in claim 1 wherein said step of determining a processing sequence for at least one sample comprises the step of determining a sample staining processing sequence.

47. (Original): A method of automated sample processing as described in claim 17 wherein said step of adaptively regulating temperature of said sample comprises the step of adaptively reducing rates of temperature change.

48 - 74. (Canceled)

75.   (Original):   An automated sample processing system comprising:

at least one sample;

an automated sample processing system to which said sample is responsive; and

an active temperature regulation element to which said sample is responsive.

76 - 89.   (Canceled)

90.   (Currently amended): An automated sample processing system as described in claim 75, 78, 82, or 83 wherein said automated sample processing system comprises an automated immunohistochemistry processing system.

91.   (Currently amended): An automated sample processing system as described in claim 75, 78, 82, or 83 wherein said automated sample processing system comprises an automated in-situ hybridization processing system.

92.   (Currently amended): An automated sample processing system as described in claim 75, 78, 82, or 83 wherein said automated sample processing system comprises an automated fluorescent in-situ hybridization processing system.

93.   (Currently amended): An automated sample processing system as described in claim 75, 78, 82, or 83 wherein said automated sample processing system comprises an automated microarray processing system.

94.   (Currently amended): An automated sample processing system as described in claim 75, 78, 82, or 83 wherein said automated sample processing system comprises an automated target retrieval processing system.

95.   (Currently amended): An automated sample processing system as described in claim 75, ~~78, 82, or 83~~ wherein said automated sample processing system comprises an automated stainer processing system.